REMARKS/ARGUMENTS

Claims 1-8, 10-24, 29 and 31-53 are pending and rejected in the application. Claims 9, 25-28 and 30 were previously cancelled. Claims 34-53 are cancelled. In view of the foregoing amendments and the following remarks, Applicants respectfully request allowance of the application.

INTERVIEW SUMMARY

Applicants thank the Examiner for the courtesies extended to Applicants' representatives in the telephonic interviews conducted on Dec. 3, 2009 and March 9, 2010, and provide these Statements of the Substance of the Interview in compliance with MPEP § 713.04.

During the Dec. 3, 2009 interview, the Examiner and Applicants' representative discussed claims 1 and 34-53. Agreement with respect to the claims was not reached. The Examiner discussed evolutionary PTO interpretation of *in re Bilski*, as applied to the present invention. A potential new matter rejection was discussed regarding claims 34-53. Applicants' representative and the Examiner discussed interpretation of the Lee reference as applicable to claim 1.

During the March 9, 2010 interview, the Examiner and Applicants' representatives discussed pending claims 1 and 34-53. Agreement was reached regarding the prior art and § 101 rejections. Final disposition of the application is subject to further search.

The Examiner discussed *in re Bilski*, as applied to the present invention, and agreed that the addition of "via a video coding system" to each element of the applicable claims would obviate the rejection.

Applicants' representatives and the Examiner discussed interpretation of the Lee and Tourapis references as applicable to claim 1. In light of the discussion, the Examiner agreed that the December 9, 2009 rejection, with Lee as the primary reference and Tourapis as the secondary reference, is not sustainable. The Examiner asked Applicants' representatives to supply, in this current response, a summary of their understanding of Tourapis' Figures 7-9.

The Examiner and Applicants' representatives discussed also the Examiner's issue with the IDS Applicants filed on July 13, 2009. During the discussion, the Examiner suggested there may be a computer error at the Patent Office. He requested additional time to investigate and agreed to hold compliance with the IDS requirement in abeyance until his investigation is completed. Applicants' representatives agreed they would re-send the previously-cited material if the Examiner requests it again.

CLAIM REJECTIONS – 35 USC § 112

Claims 34-53 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants have cancelled claims 34-53.

CLAIM REJECTIONS – 35 USC § 101

Claims 1-8, 10-17 and 29 and 31-33 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Applicants amended the independent claims as suggested by the Examiner to recite a video coding system as performing the various operations. Accordingly, Applicants respectfully request withdrawal of these rejections.

CLAIM REJECTIONS – 35 USC § 103

All claims stand rejected as obvious over prior art. Specifically, claims 1, 5, 10-13, 18-22, 29 and 33 stand rejected as obvious over Lee, et al. ,"Temporally Adaptive Interpolation Exploiting Temporal Masking in Visual Perception," and Tourapis, et al. (US Patent Application Publication 2003/0142748 A1). Claims 2, 6-8 and 17 are rejected as obvious over Lee in view of Tourapis and Lan et al., "Scene-Context Dependent Reference Frame Placement for MPEG Video Coding." Claims 3, 4, 14 and 23 are rejected as obvious over Lee, Tourapis and Liu et al., (US Patent Application Publication 2002/0146071 A1). Claims 15 and 24 are rejected as obvious over Lee, Tourapis and Mitchell, "MPEG Video Compression Standard." Claim 16 is rejected as obvious over Lee, Tourapis and Ohm, "Digitale Bildcodierung." Claim 31 is rejected under 35 U.S.C. § 103(a) as obvious over Tourapis in view of Ardizzone et al., "Video Indexing Using MPEG Motion Compensation Vectors." Claim 32 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee, in view of Tourapis, and further in view of Van Overveld et al.,

(hereinafter "Overveld"), US Pub. No. 2002/0012452. Applicants respectfully request withdrawal of the outstanding rejections.

CLAIMS 1-8, 10-24, 29, AND 31-33 DEFINE OVER THE PRIOR ART

Claims 1, 5, 10-13, 18-22, 29, and 32-33 are rejected as obvious over <u>Lee</u> in view of <u>Tourapis</u>. The remaining claims stand rejected as obvious over <u>Lee</u>, <u>Tourapis</u> and various other supplemental references. As agreed in the March 9, 2010 interview, the outstanding rejections should be withdrawn because the cited art, even if considered in combination, does not teach or suggest every element of independent claims 1, 10, 18, 29, and 33.

Consider claim 1, which states in part:

comparing the motion speed of a first picture in the plurality, temporally closest to the reference picture, *to the motion speeds of each of the other pictures therein*, and

for each picture in the plurality of pictures *exhibiting motion speed consistent with the first picture, assigning such pictures as B pictures*.

The cited art does not teach or suggest this subject matter. The Office asserts that <u>Lee</u> teaches "a method for dynamically determining a Group of Picture (GOP) structure in a video based on temporal segmentation." (Office Action dated Dec. 9, 2009, pgs. 10-11). At p. 515, <u>Lee</u> refers to two types of detectors for temporal segmentation – one using an abrupt scene change (which the Office has not used in its rejection) and the other finding scene segmentation points (SSPs). <u>Lee</u> states:

An SSP corresponds to a point where small changes of scene such as slow panning or zooming have accumulated over several frames to exceed a distance measure threshold. This detector declares the current frame as an SSP when the distance measure *between the current frame and the last reference frame is above a threshold*.

<u>Lee's</u> system is based on a metric – a "distance measure" – between the current frame and the last reference frame (notably not the current frame and the frame following the last reference frame, as is claimed), and an SSP is declared when this distance measure exceeds a given threshold. <u>Lee</u> gives five examples of distance measures, none of which involve comparisons of

motion speed. Although the Office cites to the motion compensation error on p. 519 (option 5), this technique involves a comparison of *image* data, not *motion* data. Lee has no disclosure that motion speed of a first frame is compared to motion speeds of any other frame. Although Lee describes dynamically-extendable GOPs generally, his operations are very different than those recited in claim 1. Agreement was reached on this issue during the March 9, 2010 interview.

During the interview, the Examiner suggested that Tourapis, FIGS. 7-9 may be relevant to the pending claims. Although no rejection has yet been made with Tourapis as a primary reference, the following explanatory notes may be useful to guide further prosecution. Tourapis generally describes direct mode prediction in a manner discussed in Applicant's specification, for example, ¶10. Direct mode prediction permits an encoder to code a bidirectionally-coded block of video data without use of motion vectors; such motion vectors are interpolated from motion vectors received from other frames. Claim 1, however, is directed to a mode decision problem – deciding which pictures can be coded as B pictures. As described in claim 1, the picture assignments are made based on comparisons of motion speed between a first frame and motion speeds of other frames. Tourapis has no disclosure on this point.

Tourapis has no disclosure of frame-type assignments. In Tourapis's examples, the coding types are decided prior to coding and appear to resemble fixed patterns (e.g., PBP in FIG. 8, PPP in FIG. 9; also, IBBPBBP in FIG. 4). In this regard, Tourapis seems similar to those systems described in Applicants' specification at ¶18 that make coding decisions according to predetermined patterns. Tourapis, at FIG. 7, presents a variant of direct mode coding that interpolates block motion based on block acceleration rather than block velocity, and FIGS. 8-9 simply show that motion can be modeled using "pixel projection" (Figure 8 for B frames, and Figure 9 for P frames), which takes into account the motion of individual pixels. Further, Tourapis has no disclosure describing a comparison between motion speed of a first frame that follows a reference frame to motion speeds of other frames that follow the first frame. None of these figures or their descriptions show a determination of consistency as between frames (much less one based on the motion speed of a first frame temporally closest to a reference frame), or frame types being derived from motion vectors; Tourapis is limited to determining how to code video data when motion is known.

Independent claims 10, 18, 29 and 33 each recite subject matter similar to that described above and are distinguished from the cited art on the same basis. Because the combination of <u>Lee</u> and <u>Tourapis</u> does not teach or suggest the above limitations, the combination does not render independent claims 1, 10, 18, 29 and 33 and their associated dependent claims obvious under § 103. Therefore, Applicants respectfully request withdrawal of the rejection as to all pending claims.

Finally, and as a separate matter, Applicants respectfully submit that the Office's characterization of the Dec. 3, 2009 interview in the "Response to Arguments" section of the immediate action (page 5) is inaccurate. Applicants did not agree that the metrics of Tourapis can be combined with Lee's processes. As discussed above, and acknowledged during the March 9, 2010 interview, Applicants believe Lee's processes and Tourapis's processes are very different from each other and from the subject matter of the pending claims.

<u>**CONCLUSION**</u>

In view of the above amendments and arguments, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at (408) 975-7500.

The Commissioner is authorized to charge any additional fees or credit any overpayments which may be incurred in connection with this paper under 37 C.F.R. §§ 1.16 or 1.17 to Deposit Account No. **11-0600**.

Respectfully submitted,

KENYON & KENYON LLP

Date: <u>March 09, 2010</u>

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